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ABSTRACT

In an effort to bring preschool training opportunities to economically disadvantaged young children in rural areas, the Appalachia Educational Laboratory has devised a program using educational television, weekly home visitation by paraprofessional school personnel, and mobile classrooms. Evaluation of the program indicates that children who have participated in the program have increased language development and cognitive learning, and greater psychomotor and social skills development. The cost of the program was found to be approximately one-half that of the standard kindergarten program. (VM)

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HOME-ORIENTED PRESCHOOL EDUCATION

by

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Home-Oriented Preschool Education

The well-being and wholesome development of the individual during infancy and early childhood years is recognized by an increasing number of psychologists and educators as crucial. The importance of training in the formative years is predicated on the assumption that there is a high positive correlation between formalized preschool training and later performance in school and in society. The widespread acceptance of this hypothesis is clearly demonstrated by the nation's investment in Head Start. Additional evidence is contained in the many proposals, from Montessori[1] to Bloom[2], for early educational intervention into the lives of culturally disadvantaged children.

The traditional way for meeting this need in the past has been to establish public kindergartens. These have generally been limited to urban and suburban areas, however, and no state or section in the United States has provided an adequate program of preschool education to rural children. Neither has any of them begun preschool education for children under age five, although it is known that educational nurture should begin at an earlier age.

Two conclusions that may be drawn are that conventional kindergartens are not providing adequate preschool education for all of the children of America who need early formal training to enhance their chances for success in life and that an alternative program for providing preschool education at an earlier age and to rural children needs to be developed.

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[1]Fred M. Hechinger, Ed., Pre-School Education Today, Doubleday and Company, Inc., New York, 1966, pp. 58-60.

[2]Lester D. Crow et al, Educating the Culturally Disadvantaged Child, David McKay Company, Inc., New York, 1966, pp. 118-119.

Such an alternative program is needed especially in Appalachia where the population is largely rural and where publicly supported kindergartens are not available for the most part. Poverty and cultural deprivation strike deep in Appalachia, and many children caught in its pockets of social poverty have been doomed to lifelong separation from opportunities the outside world of America increasingly values as the inherent right of every child. The adults in the life of the average Appalachian child cannot provide sufficient means of escape because they themselves are victims of the same incapsulation.

West Virginia, the only state lying wholly within Appalachia, has taken a step which may lead to its becoming the first state to actually make preschool education available to all eligible children, rural as well as urban. On March 13, 1971, both houses of the West Virginia Legislature passed Senate Bill Number 343 (Mr. McKown, original sponsor) which specifically provides for an alternative to the usual classroom-oriented kindergarten.

The bill first provides for the West Virginia Department of Education to develop criteria and guidelines for certification of both professional and paraprofessional personnel and for the establishment and operation of both public and nonpublic early childhood education programs. It then states:

> Pursuant to such guidelines and criteria, and only pursuant to such guidelines and criteria, the county boards may establish programs taking early childhood education to the homes of the children involved, using educational television, paraprofessional personnel in addition to and to supplement regularly certified teachers, mobile or permanent classrooms and other means developed to best carry early childhood education to the child in its home and enlist the aid and involvement of its parent or parents in presenting the program to the child; or may develop programs of a more formal kindergarten type, in existing school buildings, or both, as such county board may determine, taking into consideration the cost, the terrain, the existing available facilities,

> the distances each child may be required to travel, the time each child may be required to be away from home, the child's health, the involvement of parents and such other factors as each county board may find pertinent. (Senate Bill 343, lines 38-56, inclusive)

The language of Bill 343 can be recognized as having direct reference to the early childhood education program of the Appalachia Educational Laboratory. Two factors cited above--the persisting cultural deprivation of Appalachia and the importance of early years to later development--first prompted selection of early childhood education as a priority endeavor of the Laboratory. It was evident that separation of Appalachian children from the opportunities afforded by a preschool education was an obstacle to their wholesome development and well-being and had an accumulative debilitating effect on performance in school.

The strategy for the achievement of the objectives of the Appalachia Preschool Education Program has been the development of a child-centered, home-oriented program to be delivered by means of television broadcasts, home visitations, mobile classrooms, and other media. It has involved building a curriculum based on behavioral objectives and preparing materials and methods particularly appropriate for children of three, four, and five years of age living in rural Appalachia.

The physical constraints of Appalachia were factors which influenced selection of the strategy. Isolated schools (532 one-room schools in the region in 1967) in remote sections of a sparsely populated and mountainous region and a primitive road system precluded establishment of conventional classroom-oriented kindergartens common in urban areas. Further, funds are not available for this approach; and even if they were, prepared teachers are not available (67 certified preschool teachers in West Virginia in 1969). The establishment of such kindergartens would require a ten percent increase

in classroom space, equipment, and auxiliary services. More importantly, however, the traditional design does not include instruction of three- and four-year-old children and thus does not provide sufficiently the readiness training required for first graders entering school.

Another factor influencing the selection of the strategy was the presence of a television set in over 90 percent of the homes in Appalachia. Most preschool children in these homes watch television several hours a day, with 80 percent watching two hours or more.[3] It was assumed they could be guided into viewing and participating in instructional broadcasts.

Parents, even those with low aspirational levels, usually want their children to have better opportunities than they have experienced. On the basis of their participation in Head Start, it was assumed that these parents would maintain schedules and participate in learning activities beneficial to their children if stimulated in the effort by home visitors.

Since the research community had shown renewed interest in early childhood education in recent years, it was possible for the Laboratory to find information useful in its developmental effort. This included work completed and in progress on Head Start; activities of research and development centers such as the University of Georgia's Center for the Stimulation of Early Learning; the resources of the National Laboratory for Early Childhood Education and its affiliates, such as the Demonstration and Research Center for Early Education at George Peabody College for Teachers; and the research done by Deutsch, Bloom, Segal, Piaget, Bereiter, and others.

The Laboratory program would provide preschool training without the constraints imposed by the traditional approach. In both the traditional

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[3]Frank H. Hooper and William H. Marshall, The Initial Phase of a Preschool Curriculum Development Project, Final Report, Morgantown, West Virginia, 1968, pp. Q-27, Q-29.

approach and the one proposed, the objective is to facilitate development in language, cognition, psychomotor, and orienting and attending skills. The unique difference of the Appalachia Preschool Education Program is the method of linking teacher and learner. It would serve essentially the same number of preschoolers with the same number of personnel but would alter the roles and responsibilities of personnel by delivering the program via television, mobile facilities, and paraprofessionals.

A survey of the literature disclosed that much attention had been given to inner-city, disadvantaged preschoolers and to urban or suburban middle-class kindergarten pupils, but very little was known about the rural child. In order to conduct a study of the characteristics of the rural preschool child in Appalachia, a sample of 160 children in Monongalia and Upshur Counties of West Virginia was selected. One group was rural farm and the other rural nonfarm as defined by the United States Census Bureau. The findings of this survey provided the following information: The family in rural Appalachia is basically stable and intact. Ninety percent of the homes had both the father and mother present. Negroes amounted to about eight percent of the total population, which is near the West Virginia average. About 45 percent of the parents fell in the 11th and 12th grades as the highest grade completed. About 60 percent owned their own homes. The income of approximately 68 percent of the families was below $4,000 per year. The aspiration of the parent for the child in school was higher than their own accomplishment. Sixty-five percent want their child to finish college, but this is not attainable in West Virginia at the present time. Currently less than 30 percent are completing college. One portion of the survey asked how often the child was read to by others. If the child was a first child he was read to by almost 85 percent of the parents. The incidence of reading

for the second child dropped to about 40 percent, and the third child was read to in only 12 percent of the cases responding.

A second portion of the survey was an intellectual assessment. The instruments used in this assessment were the Peabody Picture Vocabulary Test, the Stanford-Binet Intelligence Test, Kagan's Matching From Familiar Figures Cognitive Tasks, Kagan's Draw a Line Motor Inhibition Tests, the Illinois Test of Psycho-Linguistic Ability, the Frostig Developmental Test of Visual Perception, and for the five and one-half and six and one-half year-old children only, a series of Piagetian Tasks. The summary statement is as follows: "This initial assessment reveals a picture of cultural diversity rather than uniform cognitive intellectual deficits. These deficits tend to center upon verbal tasks or those problem settings which demand symbolic representation."

On the Peabody Picture Vocabulary Test, the IQ scores were below the national average at every age level, particularly so for the females in the sample. On the Stanford-Binet, the IQ of all age groups was in the normality range. In every comparison the child was more likely to pass performance type items than verbal items. On the Frostig, performance on figure, ground and form constancy was notably weak. Dr. Frostig considers these tasks particularly relevant to reading readiness. On the Illinois Test of Psycho-Linguistic Ability there are nine theoretically distinct subtests. In the auditory vocal sequential subtest, the auditory decoding, and the visual decoding subtests, performance was considered adequate. On two association tasks there appeared to be intermediate difficulty. The coding tasks, visual motor sequential tasks, and auditory vocal automatic tasks revealed the greatest deficits and also showed increased decrement with age. On the Piagetian tasks, performance was quite adequate for the

age range which was five and one-half to six and one-half years. Males were superior to females on all conservation tasks at both age levels.

Finally, a basic curriculum expressed in terms of behavioral objectives was written for the guidance of the people who would be implementing the program. These objectives were divided into cognitive skills, language skills, psychomotor skills, and orienting and attending skills. It was understood that this list would be subject to revision, addition, and deletion as the project continued.

Concurrent with the above work, the staff of AEL was engaged in finding the people, the place, and the facilities required to implement the program.

The place sought for the field test was one which would a) be typical of rural Appalachia, geographically, economically, and in population pattern; b) have local school people interested in seeing an innovative preschool program in their area; and c) be served by a local television station willing to cooperate on the necessary broadcasts. Such an area was found in southern West Virginia in the counties of Raleigh, Fayette, Summers, and Mercer.

A survey of five television facilities was made in the search for suitable production capabilities. A contract was signed with WSAZ-TV of Huntington, West Virginia, to use its Charleston studio. This contract provided for office space, studio space, videotape recording equipment, and technical personnel to operate the equipment. Technical equipment and personnel were available two hours per day on a set schedule.

A specially designed mobile classroom was ordered from a manufacturer in early July, 1968. Due to procurement difficulties, this unit did not begin operation until early February, 1969.

It had been decided that a high degree of correlation between components would be required to make the program most effective, and the way to achieve this correlation would be to have all curriculum planning and materials designed and produced by one group of people. A five-member Curriculum Materials Team was assembled to begin work on July 1, 1968.

The field test began in September, 1968.

The Curriculum Materials Team set up natural groupings of objectives and from them constructed units of work and an allocation of the time to be devoted to the unit. It then decided on a theme to use as a vehicle for presenting and teaching those objectives. Each person on the Team had his or her own responsibility to one element; however, the group worked closely together to maintain correlation. For example, the person writing the home visitation materials knew what had occurred on the television program for any given day. A poem used on television might be printed and sent to the home or to the mobile classroom. The Curriculum Materials Team produced all of the curriculum materials--tapes, children's worksheets, parent guides, mobile classroom guides, etc.

At first the Curriculum Materials Team was guided by the information provided about Appalachian preschoolers in the West Virginia University research. This helped to determine level of concepts to be presented, emphasis to be placed on various ski'ls, and so on. However, a feedback loop had been built into the design so that after only a very short period of time it was possible to incorporate actual observations of children into the planning process.

"Around the Bend," the television element, was a 30-minute broadcast which was on the air at 9:30 a.m. five days a week from the end of September until the middle of May. This period of time was selected to

conform to a school year, since it is anticipated that eventually local school systems will be administering the program.

The on-camera teacher is not presented as a teacher, per se. Instead, she is a friend who invites the young children into her home where she talks to them about things of interest to them.

Film shot on location allows teacher and children to explore other places together, such as an airport or a library. The broadcasts are not "teachy," but are designed so that the child has fun as he explores new ideas and new things.

This is not to say that preschool activities are overlooked. Some of the concepts explored include large and small, same and different, classification, seriation, numbers and numerals, and letters. There also are rhythmic activities, body movement, sounds, textures, and weather.

Participation by the children is encouraged, both physical and mental, and feedback from the homes indicates that participation is enthusiastic on the part of most of them. Questions are asked and children respond. Activities are demonstrated and then the teacher and the children perform them together.

The home visitors were recruited from the area in which they were to work. The requirements specified that the applicants were to be 20 years of age or older, hold a driver's license, have a car available to them, and be a high school graduate or equivalent. The eight home visitors employed ranged in age from 20 to 60, in education from General Educational Development Diploma to two years of college, and in previous work experience from housewife to substitute teacher and Head Start aide.

The home visitors were given three weeks of intensive training before beginning their duties. The first two weeks were provided by a consultant

from the National College of Education who had had previous experience in training Head Start aides and similar paraprofessionals. Time was spent on child development, particularly for the relevant ages to this project and to teaching techniques and materials for preschool children. The third week was devoted to sensitivity training, particularly interview techniques and acceptance of conditions as they are found. The sensitivity training was provided by Psycho-Dynamics, Inc.

The first thing that paraprofessionals had to do was to recruit the sample. In order to do this each was assigned a certain territory to survey for preschool children. Thus, the initial contact with the home was made by the paraprofessional and was maintained through her. Parents with preschool children were asked if they would like to have their children participate. Less than five percent declined. From those who were agreeable, a sample was selected and the program got under way with the home visitor making a weekly visit of approximately one-half hour each. Her effort was directed toward helping the parent help the child. In order to do so she pursued three activities.

The first related directly to the television broadcast. During her weekly visit she explained the theme of the coming week's episodes and told the mother of items which the child would need in order to participate. These might be household items, such as buttons or acorns for counting, or the home visitor might deliver an item not usually found at home, such as finger paint, and remind the mother to spread out lots of newspapers. There might also be a sheet prepared by the Curriculum Materials Team which pictured the three bears which mother needed to cut out so the child could have samples of large and small as the teacher talked about the concept.

Secondly, the home visitor provided a set of suggestions for games or activities which complemented the TV episodes but were not dependent on them. These were aimed at the same set of objectives but were intended for use at any time during the week. These were also produced by the Curriculum Materials Team.

As a third facet to the job, the home visitor was an adult interested in children. As such, she provided a strong motivation for the mother to maintain her interest in the child and to follow through on activities. She also provided a broadened horizon for the child. In many instances she was the only adult other than family members to visit the home during the week.

In addition, the home visitor was the prime source for feedback for the team. Each day she watched the TV broadcast with a child in order to make a direct observation. During the remainder of her visits, she talked with the mother and child about their reactions to the program and reported these to the Curriculum Materials Team. Each home visitor saw approximately 30 mothers per week.

Designing the mobile classroom was a four-stage process. A consultant with experience in designing mobile facilities of many types, a professor from Pennsylvania State University, was employed by AEL. He drew up the basic design and specifications. His design was then submitted to a panel of early childhood people who made several suggestions which were incorporated into a second version. The Curriculum Materials Team suggested certain items to be included in order to implement program ideas which were felt to be important. Finally, the chief designer for a firm engaged in the manufacture of such equipment drew a final design which incorporated features required by sound engineering practices. Construction followed this final design.

The facility is an 8 feet x 22 feet box on a truck; overall length is 28 feet. Inside it is fully carpeted, electrically heated, air conditioned, contains its own water supply, and has a chemical toilet. All the furniture is child sized--low tables, small chairs, low sink--in other words, a custom designed unit for children. It is colorfully decorated so that it is a pleasant place to be.

The mobile classroom was staffed by a professional preschool teacher and an aide. They had at their disposal a complete audio visual unit, a cooking area, chalk board and bulletin board, cabinet space, bookshelves, a sound-activated colored light display, and books, toys, and games galore.

Into this setting was introduced a group of 10 to 14 children for one and one-half hours per week. There were individual activities, group activities, a snack time, and each activity was aimed toward the same group of objectives that the other two elements of the program had for that week. The Curriculum Materials Team prepared the list of objectives and some suggested activities and the mobile classroom teacher working within this framwork drew upon her own professional skills to provide a group experience which was educational, interesting, and fun for the children.

Ten locations were visited each week by the mobile classroom. It was driven by the teacher or her aide and was attached by them to a power supply at a centrally located spot--a church lot, school yard, or community center. The parents brought the children and picked them up later. Many walked, some came in pickup trucks, and some in a Cadillac.

The summative evaluation of the AEL Early Childhood Education Program was based on program effort, program performance, and program pervasiveness. Program effort is defined as material and personnel requirements, and program performance includes achievement gain by the children and attitudes toward

the program by both children and their parents. Program pervasiveness is the extent to which a population is expected to use the program or, otherwise stated, the program market. Therefore, the three basic questions to be answered by summative evaluation of the ECE Program were 1) What is required?, 2) Does it work?, and 3) Who will use it?

It was hypothesized that there would be differences in the behaviors of children receiving the home-oriented preschool program as compared to the behaviors of children not receiving such a program. The combination of the three elements was expected to be more effective than the combination of television and home visits, and either combination was expected to be more effective than television alone. Further, it was predicted that there would be evidence that a home-oriented program would be an effective approach to providing a preschool program to rural children.

To test these hypotheses, a research design of four treatments was prepared. The treatments were:

Treatment I (T_1) - Intervention through a daily television broadcast, a weekly visit by a paraprofessional, and a weekly visit to a traveling classroom.

Treatment II (T_2) - Intervention through a daily television broadcast and a weekly visit by a paraprofessional.

Treatment III (T_3) - Intervention through a daily television broadcast.

Treatment IV (T_4) - No intervention.

The variables of age and sex were controlled so that there would be nearly equal numbers of boys and girls and nearly equal numbers of three-, four-, and five-year-old children during each year of the three-year field study. Ages were computed as of the birthday preceding November 1 of each year. There were approximately 150 children in T_1, T_2, and T_3 each year of the field study. The size of T_4 ranged from 26 during 1969-70 to 120 during the final field test year.

Program performance was defined theoretically as learning which occurred in the target population--three-, four-, and five-year-old children--as a result of the AEL Early Childhood Education Program. Learning was classified according to language, cognition, psychomotor, social skills, and affective categories.

Language was defined operationally as responses to the Illinois Test of Psycholinguistic Abilities (ITPA). Cognition was defined operationally as responses to the Peabody Picture Vocabulary Test (PPVT), and responses to the Appalachian Preschool Test of Cognitive Skills, a criterion referenced picture test similar in format to the PPVT and ITPA. Psychomotor development was indicated by scores on the Marianne Frostig Test of Perceptual Development, and the social skills achievement by children was measured by a specially designed interaction analysis technique. Interest was defined operationally as responses to attitude checklists developed by AEL staff and responses reflected in anecdotal records systematically collected during the year.

The first year of the field study was September, 1968, to June, 1969, and an evaluation report was prepared based on data collected during that year.[4] The children who received pre- and post-tests included a rather small sample of 34 in T_1, 29 and T_2, 32 in T_3, and 26 in T_4. The results from the first year indicated gains for the mobile classroom/television/home visitor group (T_1) and the television/home visitor group (T_2) on areas of the ITPA most related to program objectives such as verbal fluency and the ability to make coherent descriptive statements about physical objects. Also, the T_1 group exhibited gains on certain subtests of the Frostig which indicated increased figure-ground and embedded figure discrimination, both of which

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[4]Evaluation Report: Early Childhood Education Program, 1968-1969 Field Test, Charleston: Appalachia Educational Laboratory, 1970.

skills are thought to be highly related to reading readiness. However, no consistent pattern of gain for T_1 and/or T_2 was observed as a result of the first year's field test.

Much of the second year's summative evaluation (1969-70) was based on post test scores of 40 children in T_1, 31 in T_2, 44 in T_3, and 45 in T_4.[5] The sample included approximately the same number of children in each sex and of ages three and four as of October, 1969. One of the analyses completed on the test data was a 4 x 2 x 2 analysis of variance (four treatments, two sexes, and two age groups). The means and significance levels of differences among the means for the different subtests of the ITPA, APT, PPVT, and Frostig are presented in Table 1 for each of the treatment groups.

The pattern of differences among the treatment group means for the ITPA indicates a definite trend toward increased language development for children in the treatment groups which received the ECE intervention. The significant treatment effect for the measure of transformational grammar (Subtest 7) was considered particularly important since disadvantaged children of the Appalachian region have been previously shown to have large deficits in this area of language ability.

The differences in scores on the criterion referenced test of cognitive objectives (APT) favored the two groups which had received the mobile classroom and/or home visitors overthe group which received only the teleivison program. The two treatment groups which received visits from the paraprofessional (T_1 and T_2) also scored significantly higher on the PPVT, which was essentially a measure of vocabulary level.

In the psychomotor area which was measured by the Frostig, the treatment groups with the ECE intervention were definitely superior to the

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[5] Evaluation Report: Early Childhood Education Program, 1969-1970 Field Test, Charleston: Appalachia Educational Laboratory, February, 1971.

TABLE I

Mean Scores of Each Treatment Group on each Subtest of the ECE Testing Battery and Significance of Differences

Instrument		Description	Treatment Groups T_1	T_2	T_3	T_4	Sig. (Treatment)
Language							
ITPA	1	Vocabulary and hearing level	21.5	19.5	19.0	17.4	-
	2	Ability to match from a sample	14.3	12.6	12.6	11.8	-
	3	Vocabulary auditory association	16.6	15.5	14.1	13.3	-
	4	Association and stimuli goal	15.8	15.1	13.0	12.4	-
	5	Ability to describe objects verbally	9.7	9.4	8.0	11.4	$<$ .025
	6	Vocabulary and ability to communicate gestures	23.0	17.5	17.9	17.2	$<$ .025
	7	Ability to make grammatical transformations	11.3	12.2	9.4	10.9	$<$ .05
	8	Figure ground discrimination	12.9	11.9	12.8	13.8	-
	9	Auditory recall	18.5	18.8	18.5	17.1	-
	10	Visual recall	8.9	11.7	9.0	9.6	$<$ .025
ITPA TOTAL			151.2	144.9	133.8	132.0	-
Cognition							
APT	2	Test of cognitive objectives	29.8	30.7	23.7	27.5	$<$ .0005
PPVT Raw Score		Peabody Picture Vocabulary Test	46.4	45.0	39.8	42.8	$<$ .05
PPVT IQ		IQ	98.2	98.1	90.3	92.5	$<$ .10
Psychomotor							
Frostig	1	Hand-eye coordination in line drawing	11.9	13.6	11.3	6.6	$<$ .0005
	2	Figure ground discrimination	8.5	9.2	7.2	7.6	$<$ .05
	3	Recognition of geometric shapes	3.8	5.6	5.0	3.6	$<$ .05
	4	Discrimination of figural rotation	3.7	3.9	3.7	2.6	$<$ .0005
	5	Analysis and reproduction of simple patterns	2.1	2.0	1.6	1.8	-
FROSTIG TOTAL			26.9	31.0	23.3	20.1	$<$ .001

T_1 = Television program/Home Visitor/Mobile Classroom
T_2 = Television program/Home Visitor
T_3 = Television program
T_4 = No intervention

Definition: ITPA is Illinois Test of Psycholinguistic Abilities; APT is Appalachia Preschool Test (a Laboratory developed criterion referenced test); PPVT is the Peabody Picture Vocabulary Test (a measure of IQ); Frostig is the Marianne Frostig Test of Perceptual Development.

nonintervention group in eye motor coordination and visual perception. Significant differences in favor of the program groups were found in four of the five measures of perceptual ability. These differences were attributed to the emphasis on artistic and graphic activities which occurred throughout the ECE program.

It was hypothesized that exposure to the mobile classroom would result in the development of social skills important to learning. A sample of 54 children from T_1 and 51 children from T_2 were videotaped as they placed model furniture in a model house in groups of three or four. There were approximately equal numbers of each sex and of three-, four-, and five-year-old children. Their behavior was coded according to predetermined categories and then analyzed through interaction analysis techniques. The children who participated in the mobile classroom gave indication of having developed more constructive social skills than children who had received only the home visitor and the television program. The age group which benefited most from the mobile classroom experience was the three-year-olds, and many social skills which would normally show in four or five-year-old children were already developed among the three-year-olds who had the mobile classroom experience. The children who did not receive the mobile classroom intervention were observed to be more withdrawn and tended to leave the task more often than children who had received the intervention.

Interest inventories completed each week by the home visitors indicated that the television programs produced during the second year (1969-1970) were more effective in eliciting responses from children, maintaining a positive attitude among the children, and generating enthusiasm from children than were programs produced during the first field test year. This measure of attitude toward the ECE program indicated that both parents and

children have favorable attitudes, but the attitudes of both tended to be less positive in late October, early January, and late February.

A survey of the audience appeal of three children's instructional television programs was completed through West Virginia University so as to control for bias due to association with AEL. On a measure of general appeal by T_1, T_2, and T_3, the number of first place ratings for Captain Kangaroo was 39 percent, for Romper Room 12 percent, and for AEL;s black-and-white Around the Bend 51 percent. Practically all (89 percent) of the T_1 group parents reported that they watched the ECE television programs regularly with their children.

According to field study results, eight professionals and three support staff would be required for production of curriculum materials including television lessons regardless of the number of children to be served. In addition, one certified teacher and one aide would be required for each 150 children, and one paraprofessional home visitor for each 37.5 children is required.

Based on ECE 1969-70 field test costs, the program can be delivered to 25,000 children for an operational cost of $250.33 per child. An additional capital outlay cost of $21.98 per child (if amortized over five years) would be required.

These costs are approximately one-half of the cost of a standard kindergarten program in the state of West Virginia according to statistics provided by the West Virginia Department of Education. The per pupil cost of operation for a kindergarten program was $496 during 1969-70, and the capital outlay costs were found to be more than 7.5 times greater than that for the ECE program.

The ECE evaluation has indicated that children who experienced the program have increased language development and cognitive learning, greater

psychomotor and social skills development, and that the parents have a favorable attitude toward the ECE intervention. The cost of the program was found to be approximately one-half that for the standard kindergarten program.

The Appalachia Educational Laboratory Early Childhood Education Program was developed for the rural child. It can, however, be used in many areas of the United States where children are not presently being reached by existing preschool programs. Multi-ethnic groups have been identified as possible recipients, as have isolated American Indians, bilingual children, Chicanos, migrants, rural southern blacks, and mountain children. All of these might be characterized as children who seldom are encouraged to develop a healthy self-concept and pride in their cultural heritage.